Subject Index

Accoustic neurinomas, DNA studies 50
Acromegaly 39, 40, 128 *see also*
  surgery, SMS
  adenoma growth parameters 56
  adenoma immunocytochemistry
    12–15, 21
    growth hormone 25
  adenoma volume 60
  bromocriptine effects 63, 64
  diagnosis 253
  ectopic hormone releasing hormones
  functional testing 259
  gamma lesion results 452
  GnRH concentration 91
  growth hormone 185–92
    low 203, 204
    suppression 222, 230
  pituitary and thyroid axis 209
  radiofrequency lesioning 444, 445
    growth hormone 446
  radiotherapy
    follow-up 269–72
    growth hormone levels 269
    growth hormone response to GHRH
      273, 274
  relapse, endocrinological 268
  remission. long-term 269
  SMS 201–995
    and bromocriptine 224, 225
    continuous infusion 233, 234
    dose-response 223, 231, 232
    headaches 227
    long-term 235–9
    management 221–5, 227–31
    somatostatin receptors 194, 195
    α-subunit secretion 207, 208
    surgery 243–52
      follow-up 261, 262, 265–8
      growth hormone 243–8
      somatomedin-C levels 253–6
      stereotactic radio- 451
    thyroid function 209
    TRH response 255, 268
Acute myeloid leukaemia, radiotherapy
    272
Adenoma *see also* macro and
  microadenoma
  ACTH, corticotropic
    argyrophilic fibres 344, 345
    control 85
    cortisol effects 83
    cytokeratin 30,31
    cytokeratin patterns 32
    immunocytochemistry 16
    immunotypes 408
    prolactin secretion and CRF 363–6
    α-subunit levels 400
    S-phase cells 49
    TRH receptors 70
    treatment, Nelson's syndrome 383,
      384
    types 16
  endocrine inactive 128
  gangliocytoma 39, 40
    features 40
  glycoprotein immunotypes 407
  glycoprotein, α-subunit
    cytokeratins 30,33

gene expression 387–95
GHRH effect 80
radioimmunoassay 387, 398
secretion 395
serum levels 399–408
somatostatin levels 33
and α-subunit levels 400–2
therapy 392
variability 392
glycoprotein, β-subunit
gene probe 390
secretion 395
therapy 392
gonadotropin 17, 18
control 85
frequency 18
immunocytochemistry 18
mixed and in fertility 435
mixed, secretions 435, 436
recognition 388
secretion patterns 434, 435
α-subunit significance 437, 438
treatment 435
TRH receptors 70
growth hormone 24–6
bromocriptine effects 63, 64
cell composition 24, 26
cytokeratins 30, 33
dopamine receptors 68, 69
hyperprolactineamia 205, 206
hypothalamic control 78–80
morphology 24
paranuclear whorls 31
proliferation rate 48
radiosurgery 452
somatostatin receptors 33, 71, 194–6
S-phase cells 49
α-subunit levels 400–2
TRH receptors 70, 71
immunocytochemistry 11–19
correlations 21, 22
intratumoural cyst formation 41, 42
hormonal levels 42
invisible 60
non-secreting (chromophobe) 388
bromocriptine treatment, PET 160, 161
cell culture 418
features 440
glycoprotein subunits 415–20
gonadotropins 418, 419
hormone products 413–16
proliferation rate 48
radioimmunoassay 414
receptors 73, 74
secretion and contents 419
somatostatin receptors 196
S-phase cells 49
α-subunit mRNA 415–17
β-subunit mRNA 415–17
transsphenoidal surgery 417
null cell 166
glycoprotein defferentiation 405
immunotype 407, 408
LHRH-analogue treatment 168
somatostatin treatment 168
α-subunit 400–2
ultrastructure 403, 405
plurihormonal 16, 17
electron microscopy 403, 404
α-subunit 400–2, 404
prolactin (prolactinoma) *see also* macr-, microadenoma
bromocriptine effects 63, 64
bromocriptine in incomplete removal 317–20
childhood 303–6
control 80, 81, 85
cytokeratins 30, 33
dopamine receptors 68, 69
dopamine role 81
factors affecting 80
fibrous tissue 321
gonadotropin secretion 327, 328
hypthalamus role 277
immunocytochemistry 15, 16
immunotypes 408
inaccessible 334
induction in transsexuals 311
magnetic resonance imaging 128, 142
paraplegia from metastases 337, 338
proliferation rate 48
radiofrequency leasioning 445
radiosurgery 452, 453
recurrence 306
somatostatin receptors 33, 71
S-phase cells 49
α-subunit 400–2
therapy in childhood 304, 305
thyrotropin secretion 327, 328
TRH receptors 69, 70
vascularization 81
xenotransplantation 325

somatoprolactinic 12, 13
somatothyrotropic 208
somatotropic
and acromegaly 13, 14
hormones secreted 14
immunocytochemistry 13–15
prolactin levels 13
treatment 15
thyrotropic (TSH) 16, 17, 71, 421–4
control 85
features 422
immunocytochemistry 17
radiotherapy 426, 428
SMS 201-995 treatment 429, 430
somatostatin treatment 167, 168
S-phase cells 49
α-subunit 388
thyroid hormones 422
TRH receptors 70
TSH heterogeneity 423–8
TSH regulators 83
Adenomatous cells, arrangement 6
Adenylate cyclase
growth hormone release and age 180
growth hormone-secreting adenomas 79, 80
stimulatory protein 80
Adrenalectomy in Cushing's syndrome 90
Adrenocortical failure, tertiary 431
Adrenocortical function test in adenomas 431, 432
Adrenocorticotropic hormone (ACTH)
see also Cushing's syndrome
assay 354
ectopic production 87–9, 361
sources 343
after neurosurgery 342
petrosal sinus sampling 355
release control in Cushing's disease 349–51
SMS 201-995 effects 218
secreting cell hyperplasia 342
micrograph 344
recurrence 346
Adverse reactions (side-effects)
bromocriptine 315, 320
radiotherapy 272
SMS 201-995 224, 227, 230, 238, 239
Age-related changes
GHRH pituitary response 178
pituitary gland shape 113–15
somatotropic response to GHRH in rats 180
Amenorrhoea-galactorrhoea syndrome 14, 39, 40
and immunocytochemistry 21
Amino acid metabolism 163
markers 156
pituitary adenomata 165
γ-Amino-β-hydroxybutyric acid (GABOB)
growth hormone in hyperprolactinaemia 335, 336
AMP, cyclic
GHRH effects 190
and theophylline 190, 191
GHRH-stimulated growth hormone secretion 191, 192
pituitary dopamine 296
Anatomical variants
petrosal sinus 146, 147
pituitary gland 105
Aneuploidy
DNA content 46
pituitary tumours 50
Angiotensin II, mammotroph prolactin secretion 299
Antidiuretic hormone, ectopic secretion 90
Antisera
cytokeratin, mAB lu-5 28, 29, 33
glycoprotein 14
Ki-67 53, 54
types 21, 22
Arachnoid, somatostatin receptors 200
Arterial blood supply
pituitary 7, 8
prolactinomas 8
Arteriosclerosis, pituitary vasculature 109
Aspiration technique 41
Astrocytoma
radiotherapy 272
somatostatin receptors 199
Autoimmune process, lymphocytic hypophysitis 465–8

Basophil, posterior lobe invasion 367, 368
BAYk8644, mammotroph prolactin 299 300
Bitemporal hemianopsia 59
Brain tumours, somatostatin receptors 198, 199

Bromocriptine
acromegaly and growth hormone levels 265, 266
amino acid metabolism in adenomas 165
childhood prolactinomas 304, 305
compliance 313, 316
dopamine receptor effects 167
gonadotropin adenoma secretion 434
mixed 436
injectable 313, 316, 318, 319
long-acting and microadenomas 313–16
reduction 314
peroral 318, 319
preoperative and cysts 41, 42
prolactinoma effects 63, 64
incomplete removal 317–20
responsiveness 169
restored functions 321
retard 317–20
SMS 201-995 comparison 224, 225
somatotropic adenoma 15
α-subunit suppression 438
treatment, PET assessment 160–2, 163–9
5-Bromodeoxyuridine (BUdR)
incorporation 54
proliferation potential 50, 54
Buserelin, gonadotropin adenoma secretion 434

Calcium
cytosolic in prolactinoma cells 100
fura-2 indicator cells 297, 298
homeostasis and acromegaly treatment 241, 242
mobilization and pituitary dopamine 296, 297
urinary 242
Calcium channel blockers 100
Capillary bed, secondary 111
Carcinoids
releasing hormones 91, 92
thymus, GHRH 92
Carotid arteries, CT scan 109–11
Catheter *see* petrosal sinus
Cavernous sinus 109
CT scan 152
extension 137
invasion detection 151
study methods 143–8, 151, 152
Cell culture, prolactinoma
breast tumour 198
FRTL-5 thyroid 422
prolactinoma
electrical activity 99–102
factors affecting 100
Cell loss
calculation 56
fraction 57
Cell production and loss, tumours 56, 57
Cell proliferation assay 101
Central control mechanisms 77–85
Chiasma syndrome 449
Childhood
long-term therapy 305
prolactinomas 303–6
Chlorpromazine, prolactin response 324
Chromogranin 389
Circadian rhythms, prolactin 328
Clomiphene citrate, mixed gonadotropin adenomas 436
Clonidine
and galanine 178
GHRH release 179
Cold, response to 98
Computed tomography (CT) scan
adenoma consistency 137
assessment 125, 141
cavernous sinus 143, 151, 152
dynamic 106
visualization 107
evaluation 119
hyperprolactinaemia 60
macroadenoma detection 122–5
bromocriptine treatment 315
magnetic resonance imaging comparison 117–26, 129, 131, 135–8
microadenoma detection 119, 120
pituitary gland 105–11
posterior lobe 111
shape 114
sellar region 127
suprasellar extension 337
technique 107
Consistency, adenoma 124, 125, 137, 138
SMS 201-959 in acromegaly 228
Corticotropin releasing hormone (CRH, CRF)
ACTH response in Cushing's disease 349

ectopic 90, 343
-stimulation 355, 369, 370 *see also* CRF test
Cushing's disease prediction 369, 370
uses 354
Co-secretion, hormones 80
CRF, CRH *see* corticotropin releasing hormone
CRF-ACTH-cortisol axis, SMS 201-995 effects 217
CRH-test 354, 369, 370
adrenocortical function 431, 432
Cortisol, CRH response after neurosurgery 432
Cortisol resistance, familial 343
Crooke's cells 368, 371
sex steroid receptors 372
Crooke's hyaline changes 345, 346
Cushing's disease 128
ACTH levels 88
ACTH release control deficit 349
opioid effect 350, 351
adenoma immunocytochemistry 21
corticotropic adenoma 16
cortisol resistance 343, 344
dexamethasone suppression test 373, 374
ectopic CRH secretion 343
estrogen receptors 371, 372
gangliocytoma 39, 40
histological-clinical correlates 367, 368
intermediate lobe tumours 344
microadenoma incidence 341
morphometry 367, 368
nerves in tumour 344, 345
petrosal sinus blood 145
pituitary abnormalitities 345, 346
radiofrequency lesioning 444, 445
cortisol levels 445, 446
stereotactic radiosurgery 451
transsphenoidal surgery 342, 375–8
recurrence 378, 381, 382
treatments 376
types, pituitary dependence 369, 370
Cushing's syndrome
ACTH-dependent 89
treatment 90
ACTH levels 365
alcohol induced pseudo- 358
diagnosis 353–8
microadenomata 358
petrosal sinus blood 145, 353–8, 361
prolactin levels 365
Cyproterone acetate 310
Cytokeratins
antibodies in diagnosis 27–35
antibody preparation 29
pituitary adenoma frequency 28
pituitary adenoma types 30
reaction pattern 29
somatostatin receptors 32
tumours 34
visualization 28

op'DDD treatment 376
Dexamethasone suppression test
false negative 374
overnight in Cushing's disease 373, 374
Diabetes insipidus 377, 444
Diagnosis
childhood prolactinoma 304, 306
problems, Cushing's disease 343
Diagnositc sensitivity, magnetic resonance imaging 133
DNA
aneuploid content 46
nuclear content 46, 47
DNA probes
membrane hybridization oligonucleotide 389
specificity 391
DNA studies
clinical implications 50
development 45
prognosis 45–51
tumour cells 45, 46
Domperidone
prolactin release 331, 332
TSH response 332
Dopamine *see also* receptors
prolactin release 279
mammotroph 299, 300
Dopamine agonists
prolactin-impaired withdrawal 321–4
treatment 123
assessment, magnetic resonance imaging 133
Dopaminergic neurotransmission, post-treatment abnormality 332
Dopaminergic substances, molecular basis of action 293–300

Ectopic ACTH syndrome 88 *see also* adenoma, ACTH, Cushing's disease
Ectopic hormone production
releasing hormones 90
Electron microscopy, α-subunit
adenoma 403
Epidermal growth factor
adenoma effects 72, 73
cell proliferation 73
pituitary membrane binding 74
Epidural haematoma 265
Estrogens
adenoma effects 72
arteriogenesis 8
-induced hyperprolectinaemia 309–11
Ethinyl estradiol test 436
Exocytosis 64

Fibrosis 64
FK 33–824
ACTH release in Cushing's disease 350, 351
hormonal effects 214
site of action 351
Flow cytofluorimetry (FCM) 46
modal DNA values 47
Focal hyperplasia 53
Follicle stimulating hormone (FSH)
ectopic production 88 *see also* adenoma, gonadotropic
intramural cysts 42
subunit secretion 395
Fura-2, calcium indicator 297, 298

GABA *see also* γ-amino-β-butyric acid
prolactin release 279
Gadolinium-DTPA, magnetic resonance enhancement 141–3
Galanin, growth hormone 177
Gangliocytoma 343
Gasser's ganglion 109
Gastrointestinal tumours
somatostatin receptors 196, 197
Gene expression, pituitary hormone 390
Gene transcription stimulation 288
Gigantism, GHRH secretion 91
Glioblastoma, somatostatin receptors 198, 199
Glucose tolerance tests
acromegaly 222
SMS 201-995 effects 234
factors affecting 186
and growth hormone 184
acromegaly 188
Glycoprotein hormones
subunits 387
types 387
Glycoprotein hormones, α-subunit
adenoma immunotypes 407, 408
adenoma secretion in acromegaly 207, 208
adenoma types 400–2
electron microscopy 399
gene expression in adenomas 387–95
immunocytochemistry 399
measurement 398
non-adenomatous lesions 403, 408
non-secreting adenomas 415, 416
plasma levels 438
postoperative elevation 406
radioimmunoassay 397, 398
serum levels in adenomas 397–408
significance, gonadotropin adenomas 437, 438
tissue culture 208
Glycoprotein hormones, β-subunit, non-secreting adenomas 415, 416
Gonadotropic releasing hormones (GnRH)
carcinoids and acromegaly 91
ectopic release 90
Gonadotropic deficiencies 18
Gonadotropin, impaired in prolactinoma 327, 328
surgery 328
Gonadotropin releasing hormone
analogue treatment 392
G-protein
anterior pituitary 294–6
hormone receptor transmission 297
pertussis toxin effect 294
Growth of adenomas 55–62
curves 59
exponential 56, 57
equation 59
inhibition 55
limitation 57–9
logistic 57
potential 56
prognostic value 59, 60
Growth fraction 53–5
follow-up evaluation 60
and tumour diameter 55

Growth hormone
in acromegaly 185–92
follow-up, radiotherapy 269–72
GHRH response and radiotherapy 273, 274
half-life 245
intraoperative 247, 248
perioperative 244, 246, 249
postoperative 249, 266
preoperative 266
remission 267
SMS 201-995 effects 232
somatomedin C correlation in acromegaly 254–6, 262
and surgery in acromegaly 243–52
surgical reexploration 248
age and release 180
development 178, 179
diagnostic value 188
dual control 174, 175
ectopic production 87, 88
factors affecting levels 186
fluctuations 187
GHRH-induced secretion and theophylline 189–92
healthy subjects 185, 186
immunocytochemistry 23–6
intratumoural cysts 42
molecular features 176
neural pathways 174
neuropeptides and release 177
neurotransmitters and release 176, 177
paradoxical response 187
pulsatile release 175
release in acromegaly 78, 79
response, factors affecting 175
mRNA in acromegaly 203, 204
secretion, neural regulation 173–80
SMS 201-995 control in acromegaly 230, 237, 238
Growth hormone releasing hormone (GHRH)
carcinoids 91, 92
treatment 94
control 174
hypothalamus release and age 180
lung tumours 93
neuron localization 177
test, acromegaly radiotherapy 274

Haemorrhage, tumour 133

Histology *see also* immunocytochemistry
anterior pituitary 4
compartments, putuitary 4, 5
tumoural pituitary 6, 7
Homeostasis, somatostatin effects 213–18
Hormone levels
pituitary transplant 98
postoperative 60
Hypercortisolism, ACTH-dependent 89
Hyperplasia, pituitary cords 6
Hyperproloactinaemia
acromegaly adenomas 25
acromegaly treatment 255
α-amino-β-butyric acid 335, 336
estrogen-induced in transsexuals 309
functional 60
idiopathic 279
levels and tumour cells 206
recurrence 83
Hypoadrenalism 271
Hypogonadism 271, 314
Hypophysectomy, pituitary transplant in rats 97, 98
Hypophysitis, lymphocytic 465–8
autoimmunity 467
clincial features 465–7
lymphoid follicles 466
mass effect 467
surgery 466
Hypopituitarism
radiotherapy 272
in acromegaly 270
Hypothalamic control 77–85
adenomas 84
growth hormone-secreting adenomas 78
Hypothalamic secretions 67
Hypothyroidism 271
induced and prolactin 285
TSH 423

IGF (Insulin-like growth factor I) *see* somatomedin C
Immunocytochemistry, immunohistochemistry
ACTH cells 365
antisera specificity 12
clinical management 11-19, 21, 22
corticotropin adenoma 16
gangliocytoma 39, 40

glycoprotein hormone 389
gonadotropin adenoma 17, 18, 436
growth hormone adenoma 205
horome studies 23–6
lymphocytic hypophysitis 466
methods 12
non-secreting adenoma 18, 19, 414–16
oncocytomas 439, 444
pituitary tumour mRNA 394
prolactin cells and levels 206, 365
prolactinoma 15, 16
pure tumoral syndrome 22
somatotropic adenoma 13–15
thyrotropic adenoma 16, 17, 426, 427
Immunoelectron microscopy 29, 40
Immunotypes, adenoma and α-subunit 407, 408
Infertility, gonadotropin adenomas 435
Infundibular signs and age 114
Infusion, continuous SMS 201-995 in acromegaly 233–9
Initiation, adenoma 84
Insulin-induced hypoglycaemia 432
Insulin-like growth factor (IGF-I) *see* somatomedin C
Insulin tolerance test 343
Intermediate filaments 30–2, 35
Intermediate lobe tumours 344
Intraoperative monitoring, growth hormone 252
Intrasellar pressure
blood supply 460
measurement 457, 458
preoperative prolactin 458
Invasive adenomas, Nelson's syndrome 383, 384

Labelling, immunogold 13
double 436
Lactotropes, tumoral, AMP and hormonal effects 82
Laser, neodymium-YAG-
cerebrospinal fluid leakage 449
haemostasis 450
transsphenoidal surgery 449
uses 448
wavelength 448
Liquefactive necrosis 461
Lisuride 322
Logistic growth curve 57
Lung tumours, GHRH and types 93
Luteinizing hormone
ectopic production 88
intratumoral cysts 42
pulsatility and SMS 201-995 214
subunit secretion 395
Luteinizing hormone-releasing hormone analogue, adenoma treatment 168
Luteinizing hormone-releasing hormone test 438

Macroadenoma, macroprolactinoma *see also* adenoma, prolactin
cavernous sinus extension 137
long-acting bromocriptine 313–16
tumour shrinkage 315
magnetic resonance imaging 118, 122–5
Nelson's syndrome 384
parasellar extension 121, 122
sellar floor destruction 136
suprasellar 122, 123
dopamine agonists 123
α-subunit occurrence 400–2
surgery 222
TSH secreting 423
treatment types 123, 124
tumour consistency 124, 125
vasculature 81
Magnetic resonance imaging 117–26
adenoma image 159
consistency 132, 137
advantages 120, 131
assessment 125
cavernous sinus 143–8
CT comparison 117–26, 129, 131, 135–8
publications 118
dopamine agonist treatment assessment 133
efficacy 131–3
evaluation 119
gadolinium-DTPA-enhanced 141–8
lesion evaluation 140
macroadenoma detection 122–5 128–30, 132
microadenoma detection 119, 120, 132, 141, 142
normal pituitary 132
residual tumour 139
sellar lesions 127–30
sensitivity, adenoma detection 125

signal intensity 124
and tumour consistency 124, 125
surgery findings 135–8
techniques 118, 119
Mammosomatotroph cell 13
Mass effect, symptoms 467
Median eminence, prolactin secretion 281, 283
α-Melanocyte stimulating hormone (MSH) in Cushing's disease 345
Meningioma 311
epidermal growth factor receptors 200
somatostatin receptors 198–200
Meningitis, post-operative 377
Metastases
pituitary adenoma 159, 160
paraplegia 337, 338
radiography of spinal 337
D-Methionine
adenoma uptake 161
in positron emission tomography 156
L-Methionine, adenoma uptake 161, 164
Metoclopramide, prolactin levels 323
Metopyrone test 217
Mice, human prolactinoma transplantation 325, 326
Microadenoma, microprolactinoma
dopamine agonist withdrawal 322, 323
dura invasion 443
invasive and growth hormone levels 248, 249
localization, CT and MRI 136
magnetic resonance imaging 119, 120
gadolinium-enhanced 141, 142
Nelson's syndrome 384
α-subunit levels 400–2
vasculature 81, 108
visualization 130
Microadenomectomy, radiofrequency enhancement 443–6
Microdoppler 246
Mitotic index
growth raction 53
S-phase cells 49
Morphometric analysis
bromocriptine effects 63, 64
Cuishing's disease 367, 368

Necrosis
coagulative 462
liquefactive 461
Nelson's syndrome 21
ACTH-adenomas 383, 384
cell hormone secretion 366
estrogen receptors 372
secondary 378
somatostatin effect 218
α-subunit levels 408
transsphenoidal surgery 375–8
follow-up 378
treatment efficacy 383, 384
Neuropeptides, growth hormone release 177
Neurophysin and suckling 278
Neurotensin, pituitary calcium 297
Neurotransmitters, growth hormone release 176, 177
Nomifensine, prolactin release 331
SI-Nuclease mapping 391

Obesity and growth hormones 186
Oligodendroglioma, somatostatin receptors 199
Oncocytomas
features 439, 440
therapy 440
Opioids, ACTH release 349–51
Optic chiasma 110
tumour 128
Oxytocin and suckling 278

Paranuclear whorls 31
Paraplegia 337, 338
Paraventricular nucleus
prolactin release 282
role 280
Parlodel LA *see* bromocriptine, long-acting
Patch clamp technique, prolactinoma cells 99
Pergolide, transplanted prolactinoma 325, 326
Petrosal sinus, inferior
anatomical variants 146, 147
catherterization 145–8
phlebography 144, 145
sampling in Cushing's syndrome 353, 354, 361–6
ACTH and LPH 356
PHI
median eminence 281
prolactin secretion 280

Phlebography
  cavernous sinus 143
  petrosal sinus 144, 145
Pituitary apoplexy 41
  incidence 462
  non-haemorrhagic tumour infarction 461–3
Pituitary gland
  age-related changes 113–15
  anatomical variants 105
  anatomy 105, 106
  anterior, histology 4
  blood flow and perfusion
    study 458
    after surgery 457–60
  blood supply 7, 8
    portal vessels 8
  capillary bed 108, 152
    secondary 111
  cavernous sinus 109
  computed tomography 105–11
  connective tissue compartments 4–6
  dopamine role 293–300
    and second messengers 296–300
  epithelial compartments 4–6
  functional unit 3
  height and age 115
  neovascularization 460
  perfusion pressure 459
  pertussis toxin substrates 295, 296
  portal vessels 459
  posterior lobe, CT scan 111
  shape, CT 114
  size 106
  stalk inclination 115
  stalk location 115
  structure 3–9
  suprasellar cistern 109–11
  vascular compartment 4–6
Pituitary parenchyma, tumoral 6, 7
Pituitary portal system 107
Pituitary transplants and hypophysectomy in rats 97
Pituitary tuft 107, 152
Positron emission tomography (PET)
  invasive prolactinoma 159, 160
  necrosis, prolactinoma 159, 160
  net accumulation rate 158
  nuclide production 156, 157
  patient positioning 158
  positron decay 157
  principles, scheme 157, 164
  radiation dose 156
  receptor binding 169
  treatment follow-up 155–62, 163–9
  tumour visualization 158
  uptake kinetics 157
Positron emitters 156
Pregnancy, pituitary cord hyperplasia 6
Preoperative diagnosis 117–26
Primary gonadal failure 438
Primer extension analysis 391
Prognosis, pituitary adenoma 45–51
  DNA assessment 51
  growth 59, 60
Prolactin
  ectopic production 87, 88
  immunocytochemistry 23–6
  intramural cysts 42
  molecular weight and chromatography 334
  regulation and dopamine agonist withdrawal 321–4
  secretion and theophylline 190
  suckling 278
  TRH response 323
Prolactin levels
  chromatographic 333, 334
  induced hypothyroidism 286
  prolactin adenoma 15
  prolactinoma treatments 338
Prolactin releasing factors 279
Prolactin secretion
  CRF stimulated in Cushing's disease 363–8
  hypothalamus extract 281
  hypothalamus role 279
  induced hypothyroidism 285
  neuroendocrine control 277–88
  pertussis toxin and bromocriptine 295
  TRH response 287
  VIP role 281–4
Proliferation rate, pituitary tomours 48–50
Promotion, adenoma 84
Proopiomelanocortin
  cell line 367
  corticotropic adenoma 16
Pseudodiploidy 47
Puberty
  development and prolactinoma treatment 305, 306
  growth hormone 186

Raclopride, dopamine receptor 166
Radiofrequency thermal lesioning
  coagulation 444

microadenomectomy 443–6
Radioimmunoassay
gonadotropins 418
non-secreting adenomas 413
α-subunit 398
Radiosurgery, stereotactic 451–3
prolactinomas 452, 453
surgical risk 452
uses 451–3
Radiotherapy
childhood prolactinomas 305
growth hormone levels in acromegaly 269–72
preirradiation levels 272
growth hormone response to GHRH 273, 274
pituitary impairment 271
prolactin levels in prolactinoma 338
TSH secreting adenomas 426, 428
Receptors, dopamine
bromocriptine binding 167
bromocriptine treatment 165–7
growth hormone secreting-adenomas 68, 69
ligands 156
prolactin release 293
prolactin-secreting adenomas 68, 69
protection 164
raclopride study 166
Receptors, dopamine D_2
calcium mobilization 296, 297
cyclic AMP 296
inhibitory effects 297, 298
mammotroph 293
phosphatidylinositol metabolism 297
pituitary binding 294
prolactinoma binding 294
prolactin secretion 293–300
Receptors, epidermal growth factor 72, 73
brain tumours 200
pituitary membranes 74
Receptors, estradiol 72, 73
Receptors, sex steroid, cytochemistry 371, 372
Receptors, somatostatin 28, 93
adenoma types 33, 71, 72
brain tissue 200
brain tumours 198
characterization, growth hormone adenoma 194–6
cytokeratin 32
endocrine tumours 198
gastrointestinal tumours 197, 198
localization 34
pituitary tumours 194–6
tumour types 193–201
Receptor studies, significance 67–75
Receptors, TRH, adenoma types 69–71
Receptors, VIP
mammotroph 298
tumour lack 285
Recurrence
ACTH-cell hyperplasia 346
adenomas 331, 332
Cushing's disease, hormones 378, 381, 382
hyperprolactinaemia 83
transsphenoidal surgery 266, 331
Cushing's disease 378, 381, 382
Regulation, growth hormone secretion 173–80
Rejection, transplanted prolactinoma 326
Releasing hormone, provactive mixture 98
Renin-aldosterone system, SMS 201-995 effects 216
Reserpine, prolactin response to stress 280
Reverse haemolytic plaque (RHP) assay
mammotroph response to dopamine 299
Ring enhancement 463
Ring size 231
mRNA
analysis, glycoprotein and hormone subunits 391
growth hormone in unusual acromegaly 203, 204
pituitary tumour hybridized 394

Sandostatin *see* SMS 201–995
Sella, empty 129
Sellar lesions
magnetic resonance imaging 139
α-subunit levels 403, 408
Sellar region
computed tomography 127–9
magnetic resonance imaging 127–30
radiologic anatomy 105–11
Sexual performance, bromocriptine and microadenomas 314
Signal transduction mechanisms 102
Single cell proliferation assay 101

SMS 201-995 (Sandostatin, somatostatin octapeptide analogue)
ACTH effects 217, 218
acromegaly management 221–5, 227–30
bromocriptine comparison 224
carbohydrate tolerance 223, 224
continuous infusion 233, 234
dose-response 223, 231, 232
growth hormone effects 222, 230, 237
hand and ring size 232
long-term 223, 235–9
minimum dose 224
protocols 236
tumour volume 227, 238
antibody induction 224
calcium homeostasis 241, 242
carcinoid effects 94
cortisol effects 217
dose 430
enkephalin, LH effects 214
fat metabolism 230
hormonal homeostasis 213–18
pulstile LH activity 214, 215
renin-aldosterone system 216
side effects 224, 227, 230, 238, 239
somatostatin analogue 94, 194
TSH secretion syndrome 429, 430
Somatonammotropic cell labelling 23, 25
Somatomedin C (insulin-like growth factor I, IGF-I) 203
acromegaly diagnosis 253
acromegaly, serum levels 259
antiproliferative effect 200
assays 258
binding proteins 258
carcinoid response to SMS 021-995 94
decrease after adenomectomy 260
ectopic production 90, 91
features 194
growth hormone action 184
growth hormone dependence 257
growth hormone levels and acromegaly 255
half-life 260
levels and age 258
pre- and postoperative levels 256
role 213
SMS 201-995 in acromegaly 234, 236–8
treatment, endocrine active tumours 93, 94
magnetic resonance imaging assessment 168
positron emission tomography assessment 167, 168
Somatotropic cells
growth hormone adenomata 26
GHRH response 178
S-phase fraction, proliferative potential 49, 50, 54
Stalk compression syndrome 459
Static cell measurement (SCM) 46
modal DNA values 47
Stress and prolactin response 278
rats and reserpine 280
Suckling
endocrine responses 278
prolactin response 281, 283
Sulpiride
growth hormone release 78
prolactin response and microadenomectomy 82
Suprasellar cistern 109–11
Suprasellar lesions, magnetic resonance imaging 139
Surgery *see also* radiosurgery, laser
adenomectomy 253–6
childhood prolactinoma 305
postoperative complications 377
procedures, pituitary ademonas 448
transcranial 376, 448
transsphenoidal 244, 253–6, 448
Cushing's disease 342, 370, 376
endocrine follow-up 261, 262
follow-up 261, 262, 265–8
glycoprotein adenomas 398
growth hormone reduction 247–9
incomplete removal and bromocriptine 317–20
Nelson's syndrome 376
oncocytomas 439, 440
pituitary perfusion 457–60
recurrence 266, 331
somatomedin-C levels 253–62
TSH secreting tumours 426

Theophylline
GHRH-induced cyclic AMP 191
GHRH-induced growth hormone secretion 189–92
Thyroid function
acromegaly 210

evaluation 209
Thyrotropin (thyroid stimulating hormone, TSH)
elctopic production 88
gel filtration chromatography 422, 423, 427
heterogeneity 423–8
immunoperoxidase 427
impaired in prolactinoma 327, 328
induced hypothyroidism 286
lactotrope effects 82
molecular weight 423
prolactin response and microadenomectomy 82
somatostatin inhibition in acromegaly 210
subunits 425, 426
TSH adenoma patients 421–4
chromatography 424
Transnasal microadenomectomy
growth hormone effects 249, 250
invasive growth 248
outcome in acromegaly 250
and recurrence 251
Transplantation, prolactinoma tissue 325, 326
Transsexuals
estrogen-induced hyperprolactinaemia 309–11
estrogen treatment 310
Treatment escape 314
TRH/LHRH test 254
response in acromegaly 255, 268
TSH *see* thyrotropin
Tuft sign, microadenomas 108
Tumour *see* adenomas, individual tumour types
non-haemorrhagic infarction 461–3
Tumour volume, SMS 201-995 in acromegaly 238
Tumour, volume doubling time 58

Ultradian rhythms, growth hormone 175
Ultrastructure
adenoma and SMS 201-995 228
α-subunit elevation 403–6

Vascularization, tumour relationship 8
Vasoactive intestinal polypeptide (VIP)
dopamine effect 297
fibres 280
hypothalamic levels and hypothyroidism 286
lactotrope effects 82
pituitary cell 285
pituitary extract 284
pituitary levels and hypothyroidsim 286
prolactinoma role 284
prolactin release 281, 282
response in Cushing's disease 83
riboprobe 288
TRH-stimulated release 287
Visual field defects 314
Vitamin D in acromegaly treatment 241, 242
Vmax 58